WHAT IS CLAIMED IS:

1. A projection system comprising:

a light source;

a color separator which separates an incident beam according to color;

a scrolling unit, comprising at least one lens cell, which converts the rotation of the lens cell into a rectilinear motion of an area of the lens cell through which light passes so that an incident beam is scrolled;

a light valve which processes a beam transmitted by the color separator and the scrolling unit according to an image signal and which forms a color picture;

a projection lens unit which magnifies the color picture formed by the light valve and which projects the magnified color picture onto a screen; and

a polarization conversion system installed, between the color separator and the light valve, which converts the incident beam into a beam with a single polarization.

2. The projection system of claim 1, wherein

a first and a second fly-eye lens array are arranged on a light path between the color separator and the light valve, and

the polarization conversion system is installed behind the second fly-eye lens array.

3. The projection system of claim 2, wherein the polarization conversion system comprises:

a plurality of polarization beam splitters disposed perpendicular to the traveling direction of light; and

a plurality of 1/2 wavelength plates installed on emission surfaces of alternate polarization beam splitters.

4. The projection system of claim 2, wherein the thickness of each of the polarization beam splitters is half of the size of a lens cell of the second fly-eye lens array.

5. The projection system of claim 1, wherein:

the color separator includes first, second, and third dichroic filters installed aslant at different angles between the optical source and the scrolling unit; and

wherein each dichroic filter transmits a beam of one color and reflects beams of other colors.

6. The projection system of claim 1, wherein:

the color separator includes first, second, and third dichroic prisms sequentially attached to one another between the optical source and the scrolling unit; and

wherein each dichroic prism comprises a dichroic filter which transmits a beam of one color from an incident beam and reflects beams of other colors.

7. The projection system of claim 1, wherein:

the color separator includes first, second, and third dichroic filters installed in parallel between the optical source and the scrolling unit; and

each dichroic filter transmits a beam of one color from an incident beam and reflect beams of other colors.

8. The projection system of claim 7, further comprising a prism installed in front of the first, second, and third dichroic prisms.

9. The projection system of claim 1, wherein the scrolling unit comprises a spiral lens disk on which at least one cylindrical lens cell is spirally arranged.

10. The projection system of claim 1, wherein the scrolling unit comprises

first and second spiral lens disks, which are installed apart from each other and which each include at least one cylindrical lens cell that is spirally arranged, and

a glass rod installed between the first and second spiral lens disks.

11. The projection system of claim 1, further comprising a spatial filter, installed between the light source and the scrolling unit, which has a slit for controlling the divergence angle of a beam emitted from the light source.

12. The projection system of claim 1, further comprising first and second cylindrical lenses respectively installed in front of and behind the scrolling unit.

13. The projection system of claim 1, further comprising a polarization beam splitter, installed on a light path between the polarization conversion system and the light valve, which transmits a beam with a single polarization and reflects a beam with the other polarization.

14. The projection system of claim 13, wherein the polarization beam splitter comprises a wire grid polarization beam splitter.

15. A projection system comprising:

a light source;

a color separator which separates an incident beam according to color;

a scrolling unit, comprising at least one lens cell, which converts the rotation of the lens cell into a rectilinear motion of an area of the lens cell through which light passes so that an incident beam is scrolled;

a light valve which processes a beam transmitted by the color separator and the scrolling unit according to an image signal and which forms a color picture;

a projection lens unit which magnifies the color picture formed by the light valve and which projects the magnified color picture onto a screen; and

a polarization conversion system installed between the light source and the color separator, which converts the incident beam into a beam with a single polarization.

16. The projection system of claim 15, wherein the polarization conversion system comprises:

a polarization separator which reflects a first beam with a first linear polarization from a beam emitted from the light source and which transmits a second beam with a second linear polarization;

a reflector, installed apart from the polarization separator, which reflects the second beam back to the polarization separator; and

a 1/2 wavelength plate, installed on the path of one of the first beam reflected by the polarization separator and the second beam reflected by the reflector and then passed through the polarization separator, which changes the polarization of the first or second beam.

17. The projection system of claim 16, wherein the 1/2 wavelength plate is installed at the focal point of the first or second beam.

18. The projection system of claim 17, wherein

a plurality of color beams are projected onto the light valve so that color bars are formed, and

the incident beam is separated into the first and second beams in a direction perpendicular to the direction in which the color bars are arranged.

19. The projection system of claim 16, wherein the polarization conversion system includes a prism, on the opposite sides of which are installed the polarization separator and the reflector and through an incidence surface of which the beam emitted from the light source passes.

20. The projection system of claim 19, wherein the 1/2 wavelength plate is attached to an emission surface of the prism.

21. The projection system of claim 15, wherein the color separator includes first, second, and third dichroic filters, installed aslant at different angles between the optical source and the scrolling unit, which each transmit a beam of one color from an incident beam and reflect beams of other colors.

22. The projection system of claim 15, wherein:

the color separator includes first, second, and third dichroic prisms that are sequentially attached to one another between the optical source and the scrolling unit; and

each of the first, second, and third dichroic prisms respectively include a first, second, and third dichroic filter which transmit a beam of one color from an incident beam and reflect beams of other colors.

23. The projection system of claim 15, wherein the color separator includes first, second, and third dichroic filters installed in parallel between the scrolling unit and the light valve and which each transmit a beam of one color from an incident beam and reflect beams of other colors.

24. The projection system of claim 23, further comprising a prism installed in front of the first, second, and third dichroic filters.

25. The projection system of claim 15, wherein the scrolling unit comprises a spiral lens disk on which at least one cylindrical lens cell is spirally arranged.

26. The projection system of claim 15, wherein the scrolling unit comprises

first and second spiral lens disks, which are installed apart from each other and which each include at least one cylindrical lens cell that is spirally arranged, and

a glass rod installed between the first and second spiral lens disks.

27. The projection system of claim 15, further comprising a spatial filter installed between the light source and the scrolling unit, comprising a slit for controlling the divergence angle of a beam emitted from the light source.

28. The projection system of claim 15, further comprising first and second cylindrical lenses respectively installed in front of and behind the scrolling unit.

29. The projection system of claim 15, further comprising first and second fly-eye lens arrays arranged on the light path between the scrolling unit and the light valve.